

REMARKS/ARGUMENTS

In the September 16, 2004 Office action, claims 29-32 were allowed, claims 1-6, 10-12, 14-16, 19-23, 27, 28, 43, 48-52 and 56-58 were rejected, while claims 7-9, 13, 17, 18, 24-26, 33 and 53-55 were objected to as being dependent upon a rejected base claim, but were found to be allowable if re-written in independent form including all of the limitations of the base claim and any intervening claims.

All of the rejected claims were rejected over Patent No. 5,175,457 to Vincent, either by itself under 35 U.S.C. 102, or in combination with other patents under 35 U.S.C. 103. The remarks below are accordingly directed towards the Vincent patent to rebut all of the claim rejections.

Vincent discloses a linear motor or alternator plunger configuration in which, as illustrated in FIGs. 1-3, a plunger 16 disposed between outer and inner stators 12 and 14 and moves axially in a reciprocating motion with respect to the stators, or vice versa. The plunger consists of wing segments 28, 32 on opposite sides of a central segment 30, with the segments ordinarily magnetized radially and of alternating polarities. In the embodiment of FIGs. 1-3, the central segment 30 is composed of a material having high magnetic strength, while the wing segments 28, 32 are composed of a weaker, less expensive magnetic material. (Column 3, lines 19-22, 30-36).

As illustrated in the figures and described at column 4, lines 46-60, the plunger 16 with its three constituent magnet sections 28, 30, 32 moves linearly in a reciprocating fashion between the inner and outer stators. The plunger moves as a whole, with all three of its magnet sections moving together. There is no relative movement between the dif-

ferent segments. Indeed, allowing the magnet segments to move relative to each other would frustrate the desired operation of the device, which is to have the flux linkages of a coil held in the outer stator oscillate between two extreme values, thus causing an AC voltage to be induced in the coil. (Column 4, lines 53-58). If the magnet segments did not move together, there is no guarantee that the coil would ever experience a reversal of flux linkages, since not all of the magnet segments would necessarily pass through the coil. Applicants' invention, as defined in the present claims, is quite different. All of the independent claims require a "plurality of magnets oriented successively in polar opposition for individual movement relative to each other..." (Claim 33 requires "an even number of magnets" rather than a "plurality of magnets").

This requirement that applicants' magnets move relative to each other is reflected in the specific embodiments described in the specification. For example, "the magnets mutually repel each other when they come into proximity" (page 5, lines 21-22); "With two magnets there are multiple modes of oscillation, corresponding to the several velocity peaks which occur during each one second period, for each magnet." (Page 11, lines 24-27); "Similarly, multiple oscillation modes are produced with the multiple magnets of different field strengths..." (page 12, lines 6-8); "These improvements are achieved by orienting a plurality of magnets in polar opposition for individual movement relative to a support structure..." (page 2, lines 29-31); "With this orientation the magnets exhibit multiple oscillation modes that effectively couple many different movements of the support structure into useful magnet motion." (Page 3, lines 21-24).

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Since the magnet segments of Vincent are incapable of the "individual movement relative to each other" required by all of the present claims, and in fact such individual movement would be inconsistent with Vincent's principles of operation, the claims in their present form patentably distinguish from Vincent.


Accordingly, no further amendments are being made to the rejected claims. Since the claims that were objected to depend from claims that should be found allowable, there is no need to rewrite them in independent form.

New claims 65-75 were added in the August 20, 2004 Amendment, but were not addressed in the latest Office action. Since these claims all depend, directly or indirectly, from the earlier claims discussed above, they should also be allowable.

Reconsideration of the rejection and allowance of all claims presently in the application is respectfully requested.

Respectfully submitted,

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